

APPENDIX A

**PROPOSED PLAN
PUBLIC NOTICE**

PROPOSED PLAN



Naval Submarine Base - New London

SITE 7 - TORPEDO SHOPS and SITE 14 - OVERBANK DISPOSAL AREA NORTHEAST SOIL - OPERABLE UNIT 8 PROPOSED PLAN

Introduction

In accordance with Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the law more commonly known as Superfund, this Proposed Plan summarizes the Navy's preferred option for the soil found at the Torpedo Shops (Site 7) and Overbank Disposal Area Northeast (OBDANE) (Site 14), **Operable Unit (OU) 8**, at Naval Submarine Base - New London (NSB-NLON) (Figure 1). The sites are two of 25 sites being addressed by the Navy's **Installation Restoration (IR)** Program at NSB-NLON. The IR Program is being conducted to identify and clean up sites created by past operations that do not meet today's environmental standards.

This Proposed Plan recommends removal of the Site 7 contaminated soil in **OU8**. This proposed action will address both CERCLA risks and State chemical-specific requirements. Detailed descriptions of Site 7 are provided in the **Basewide Groundwater Operable Unit Remedial Investigation (BGOURI) Update/Feasibility Study (FS)** Report, **BGOURI** Report, and Phase II RI Report, which are available in the Information Repositories at the locations identified on Page 10. The **BGOURI Update/FS** Report concluded that there are potential unacceptable risks to human health or the environment from exposure to Site 7 soil and there are potential risks for certain receptors from

The Cleanup Proposal...

After careful study of **OU8**, the Navy proposes the following plan:

Site 7 Soil:

- Complete delineation of contaminated soil and characterization of septic tank contents.
- Excavate, characterize, transport, and dispose contaminated soil and septic tank (if necessary) at an off-site location.
- Collect verification samples to ensure removal of all contaminated soil above remedial goals.
- Restore site to pre-exca-
vation conditions.

Site 14 Soil:

- No Further Action.

What Do You Think?

The Navy is accepting public comments on this Proposed Plan from July 16, 2004 to August 17, 2004. You do not have to be a technical expert to comment. If you have a comment or concern, the Navy wants to hear it before making a final decision.

There are two ways to formally register a comment:

1. Offer oral comments during the July 28, 2004 public meeting and hearing, or
2. Send written comments postmarked no later than August 17, 2004 following the instructions provided at the end of this Proposed Plan.

To the extent possible, the Navy will respond to your oral comments during the July 28, 2004 public meeting and hearing. In addition, regulations require the Navy to respond to all formal comments in writing. The Navy will review the transcript of the comments received at the meeting, and all written comments received during the formal comment period, before

making a final decision and providing a written response to the comments in a document called a **Responsiveness Summary**.

Learn More About the Proposed Plan

The Navy will describe the Proposed Plan and hear your questions at an informational public meeting.

A formal public hearing will immediately follow this meeting.

July 28	PUBLIC MEETING
Meeting: 6:30pm	
Hearing: 7:00pm	
Date: Wednesday July 28, 2004	
Location: Best Western Olympic Inn, Route 12, Groton, Connecticut	

For further information regarding the public meeting and hearing, call Ms. Melissa Griffin with the NSB-NLON Environmental Department at (860) 694-5191.

Technical terms shown in bold print
are defined in the glossary on Page 9.

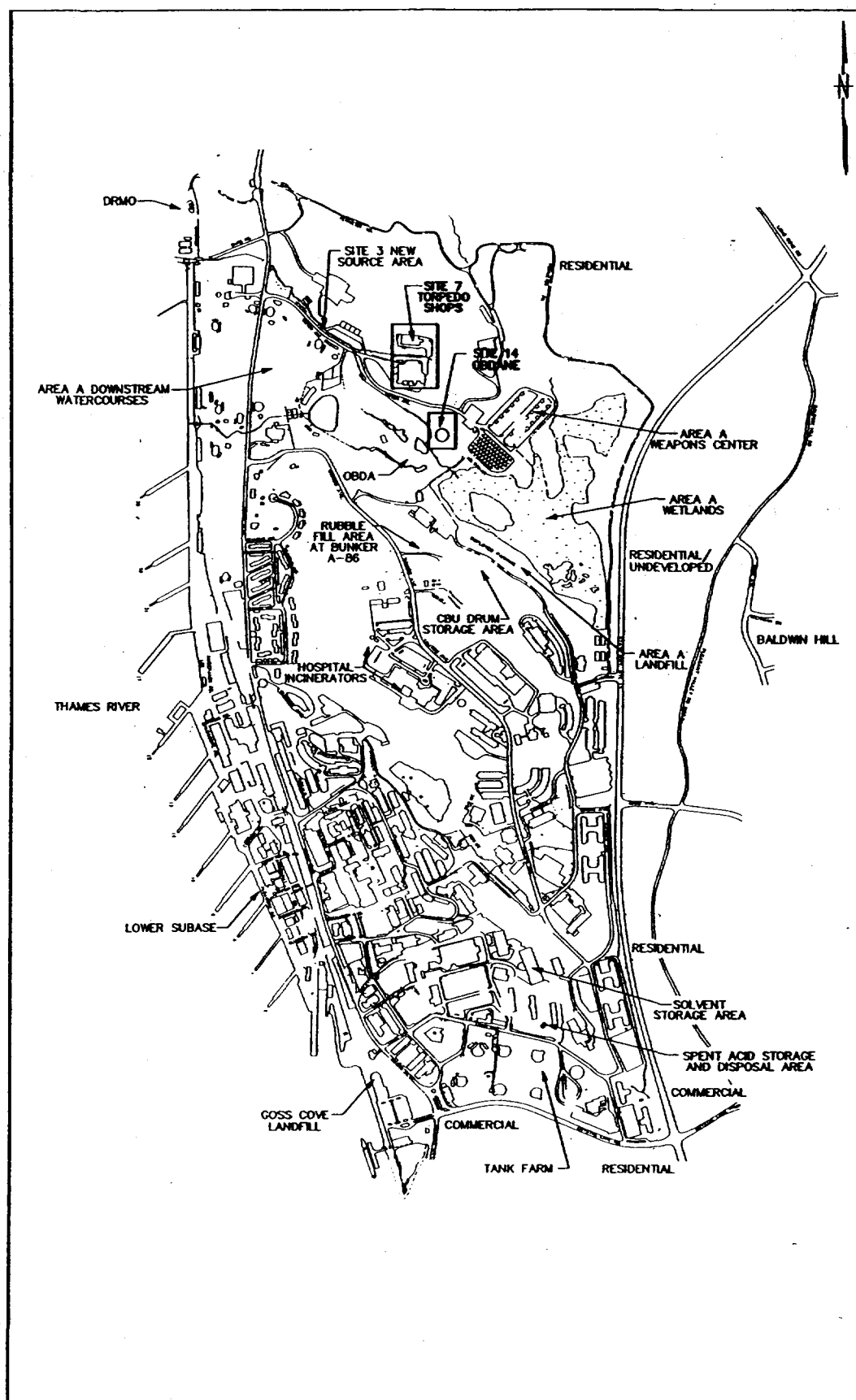


Figure 1. Site Location Map

Introduction (Continued)

direct contact with contaminated soil based on State chemical-specific requirements and potential contaminant migration issues from soil to **groundwater**. The Phase II RI Report concluded that there are no significant risks to ecological receptors from exposure to Site 7 soil. Site 7 **groundwater** contamination is being addressed as part of the Basewide **Groundwater OU9** under a separate action and in a separate decision document.

This Proposed Plan recommends No Further Action for Site 14 soil in **OU8**. A detailed description of Site 14 is provided in the Phase II RI Report, which is available in the Information Repositories. A Non-Time-Critical Removal Action (NTCRA) was conducted at Site 14 in 2001 to remove debris and contaminated soil identified at the site during the Phase II RI. The NTCRA addressed all site-related risks and further action under CERCLA is not necessary. Site 14 **groundwater** is being addressed as part of the Basewide Groundwater **OU9** in a separate decision document.

History

Site 7 is the Torpedo Shops (Buildings 325, 450, 477, and 528) and is located in the northern portion of NSB-NLON on the northern side of Triton Road (Figure 1). The Navy conducts maintenance activities on torpedoes at the site. Contaminated soil at Site 7, **OU8** was found or is suspected on the southern and western sides of Building 325 (Figure 2). The contaminated soil located on the southern side of the building appears to be related to former underground storage tanks used to store fuel oil, and the suspected soil **contamination** on the western side of the building appears to be related to the septic tank for a former septic system. The underground storage tanks were closed in the 1990s, and the septic system was abandoned when sanitary sewers were installed in 1983.

Miscellaneous wastes were dumped at Site 14 in the past. The site is located adjacent to Sites 3 and 7 in a wooded area on the edge of a ravine just north of Stream 3 (Figure 1). An NTCRA was completed at the site in 2001 to address the soil and miscellaneous wastes dumped at the site. Approximately 270 tons of material were removed and disposed off site (see Figure 3), and the site was subsequently restored.

Findings of the Field Investigations

The Navy conducted several field investigations from 1990 through 2000 to assess the nature and extent of **contamination** at Sites 7 and 14. Investigations were performed at **OU8** in 1990, 1994, and 2000. Human health and ecological **risk assessments** were performed to evaluate the potential effects of the **contamination** found in the soil of Sites 7 and 14 on human health and the environment.

The investigation of Site 7 soil identified **polynuclear aromatic hydrocarbons [(PAHs)**; benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene] and inorganics (metals) as the primary chemicals in the soil at Site 7. The **PAHs** were identified in a small area near the southeastern corner of Building 325 in surface and subsurface soil. The inorganics were detected in soil across Site 7. An additional area of soil **contamination** is suspected near the location of a septic tank formerly used for Site 7 along the western side of Building 325. Benzene, chlorobenzene, and dichlorobenzene were detected in the groundwater originating from the septic tank location. Even though these contaminants were not detected in soil samples collected at nearby locations, it is believed that they are present in the septic tank or surrounding soil and the tank or contaminated soil are acting as the source of these contaminants to groundwater.

The human health **risk assessment (HHRA)** showed that there are no unacceptable risks to potential receptors from direct exposure to the contaminants in Site 7 soil considering EPA's target risk range [1×10^{-4} < incremental cancer risk (ICR) < 10^{-6} ; hazard index (HI) < 1] and CTDEP's acceptable levels for cumulative risk (ICR < 1×10^{-5} ; HI < 1). However, the ICR for full-time workers and child resident from exposure to benzo(a)pyrene in **surface soil** and **surface/subsurface soil**, respectively, exceeded CTDEP's target level for individual chemicals (1×10^{-6}). In addition, there were contaminants detected at concentrations that exceeded Connecticut's Remediation Standard Regulations (RSRs), which are **applicable or relevant and appropriate requirements (ARARs)** for **OU8**. The maximum concentration of benzo(a)pyrene in soil exceeds Connecticut's RSRs Industrial/Commercial Direct Exposure soil criterion and the maximum concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene in soil exceed Connecticut's RSRs Residential Direct Exposure soil criteria. The maximum concentrations of

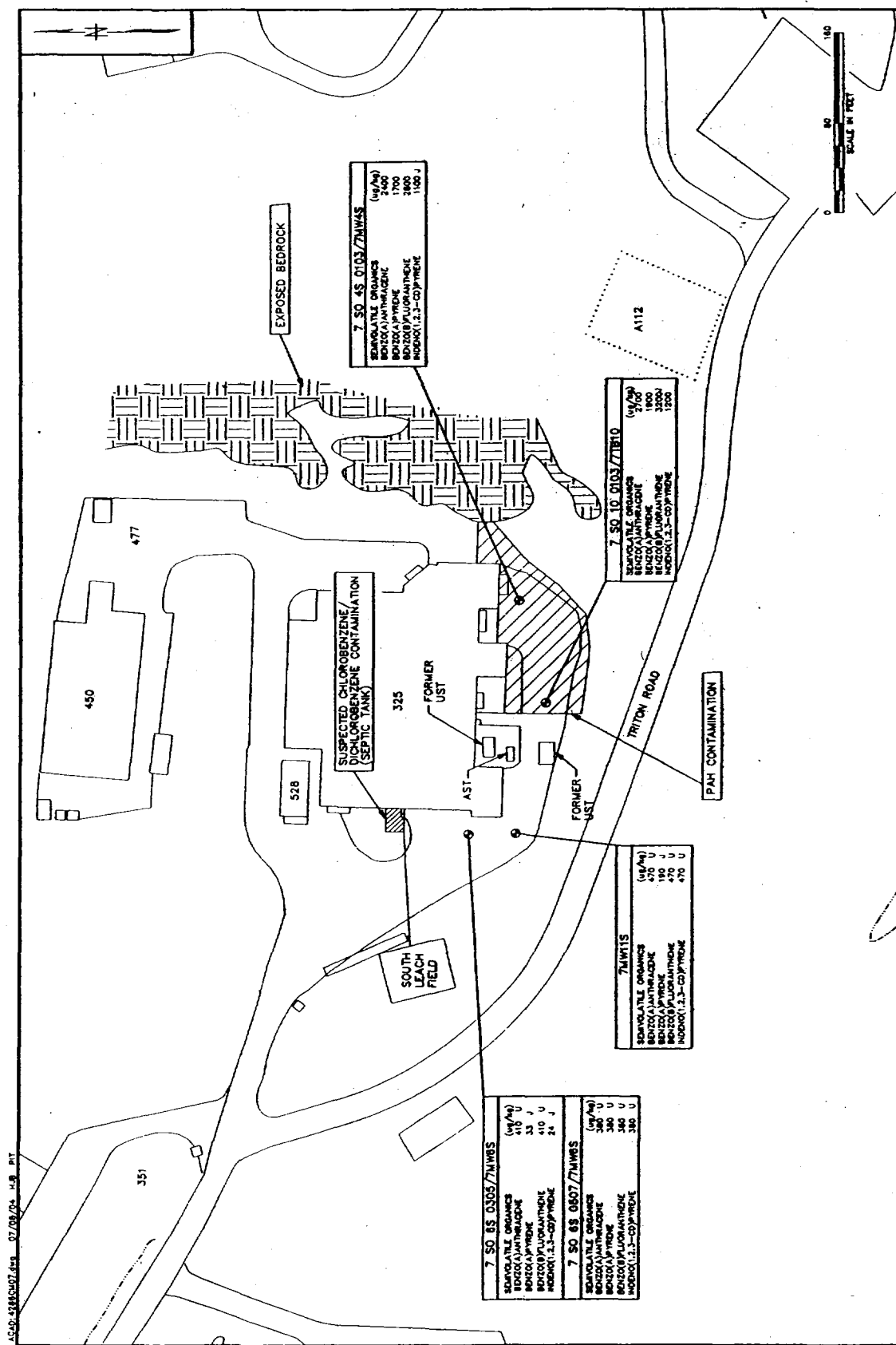


Figure 2. Site 7 Layout and Contaminant Distribution Map

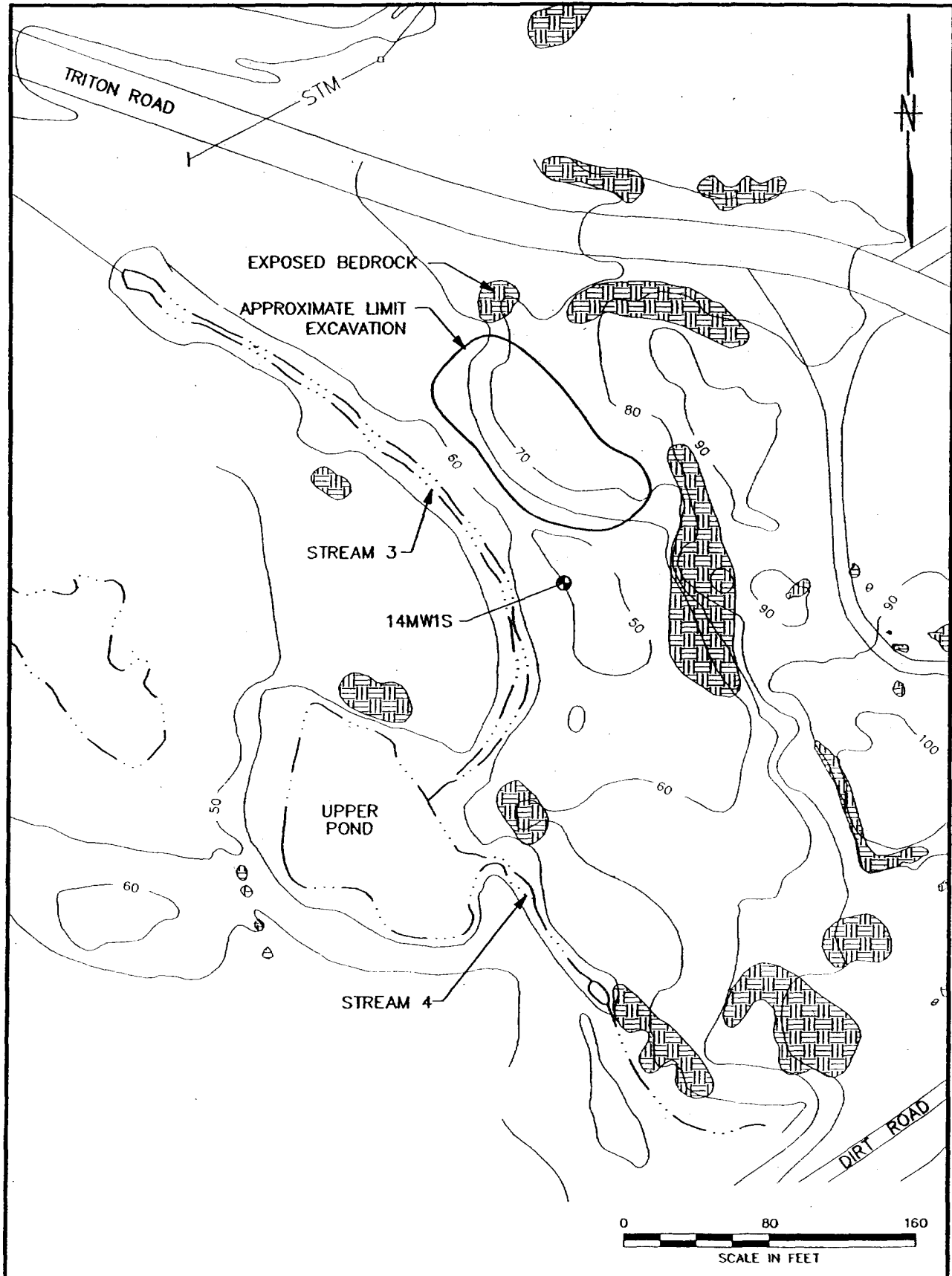


Figure 3. Site 14 NTCRA Limit of Excavation

benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene also exceed Connecticut's RSRs Pollutant Mobility Criteria, indicating a potential soil to groundwater contaminant migration concern; however, the available site data indicates that the potential for soil to groundwater migration of PAHs is not significant.

In addition, the HHRA showed that there are potential unacceptable risks to future adult residents from exposure to maximum concentrations of benzene, chlorobenzene, and dichlorobenzene in Site 7 groundwater along the western side along Building 325 [Site 7 groundwater is addressed in the Record of Decision (ROD) for Sites 3, 7, 14, 15, 18, and 20 Groundwater (a portion of the Basewide Groundwater OU9)]. Because it is suspected that the source of these groundwater contaminants is the septic tank or surrounding soil, these three groundwater contaminants were retained as suspected soil contaminants of concern (COCs) without performing additional sampling activities. The Navy took this approach to expedite resolution of Site 7 soil, and additional sampling activities will be performed as part of a pre-design investigation to confirm the extent of soil contamination at Site 7 and the contents of the septic tank.

An assessment of the risks to ecological receptors from exposure to surface soil at Site 7 was conducted during the Phase II RI. It was concluded that the Torpedo Shops soil represents little potential risk to ecological receptors. No ecological COCs were retained for the site and subsequently no response action is required for ecological receptors.

The Site 7 COCs and the remedial goals selected for each of them are as follows:

COCs	Remedial Goals that are Protective of Future Receptors
Benzene	0.02 milligrams/kilograms (mg/kg)
Chlorobenzene	2.0 mg/kg
1,4-Dichlorobenzene	1.5 mg/kg
Benzo(a)anthracene	1.0 mg/kg
Benzo(a)pyrene	1.0 mg/kg
Benzo(b)fluoranthene	1.0 mg/kg
Indeno(1,2,3-cd)pyrene	1.0 mg/kg

It is the Navy's current judgement that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of pollutants or

What is Risk and How is it Calculated?

A human health risk assessment estimates "baseline risk." This is an estimate of the likelihood of health problems occurring if no cleanup action were taken at a site. To estimate baseline risk at a site, the Navy undertakes a four-step process:

- Step 1: Analyze Contamination
- Step 2: Estimate Exposure
- Step 3: Assess Potential Health Dangers
- Step 4: Characterize Site Risk

In Step 1, the Navy looks at the concentration of contaminants found at a site as well as past scientific studies on the effects these contaminants have had on people (or animals, when human studies are unavailable). Comparisons between site-specific concentrations and concentrations reported in past studies helps the Navy to determine which contaminants are most likely to pose the greatest threat to human health.

In Step 2, the Navy considers the different ways that people might be exposed to the contaminants identified in Step 1, the concentrations that people might be exposed to, and the potential frequency and duration of exposure. Using this information, the Navy calculates a "reasonable maximum exposure" (RME) scenario, which portrays the highest level of human exposure that could reasonably be expected to occur.

In Step 3, the Navy uses the information from Step 2 combined with information on the toxicity of each chemical to assess potential health risks. The likelihood of any kind of cancer resulting from a site is generally expressed as an upper bound probability; for example, a "1 in 10,000 chance." In other words, for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure to site contaminants. An extra cancer case means that one more person could get cancer than would normally be expected to from all other causes. For non-cancer health effects, the Navy calculated a "hazard index." The key concept here is that a "threshold level" (measured usually as a hazard index of less than 1) exists below which non-cancer health effects are no longer predicted.

In Step 4, the Navy determines whether site risks are great enough to cause health problems for people at or near the site. The results of the three previous steps are combined, evaluated, and summarized. The Navy adds up the potential risks from the individual contaminants to determine the total risk resulting from the site.

contaminants from Site 7 soil which may present an imminent and substantial endangerment to public health or welfare.

The investigation of Site 14 soil identified minimal organic contamination, including low concentrations of volatile organic compounds, PAHs, and pesticides, and slightly more significant inorganic contamination (e.g., arsenic and lead). The HHRA showed that the risks to potential receptors associated with Site 14 soil were minimal; however, the results of the ecological risk assessment indicated that the chemicals detected in Site 14 soil could adversely impact ecological receptors. ANTCRA was conducted at Site 14 in 2001 and approximately 270 tons of debris and contaminated soil were removed and disposed off site. The remedial goals selected for the NTCRA were a combination of the goals selected for the Area A Downstream Watercourses/OBDA (Site 3/OU3) remedial action and the Connecticut GB Pollutant Mobility Criteria. By removing all debris and contaminated soil with concentrations above the remedial goals, the Navy addressed all site-related risks. It is the Navy's current judgment that No Further Action under CERCLA is necessary for Site 14 soil.

Summary of Alternatives Considered for OU8

The Navy prepared the **BGOURI Update/FS** to evaluate alternatives for Site 7, OU8. The three alternatives evaluated included Alternative S1 (No Action), Alternative S2 (Institutional Controls with Permeable Cover), and Alternative S3 (Excavation and Off-Site Disposal). Alternative S1 was evaluated for comparison purposes, and the other two alternatives were selected based upon their abilities to meet the Remedial Action Objectives (RAOs). The RAOs as defined in the **FS** are (1) to protect current receptors (construction workers and employees) from incidental exposure to contaminated soil, (2) to protect existing groundwater quality, (3) to protect aquatic ecological receptors, and (4) to protect potential future receptors (residential use) from incidental exposure to contaminated soil. The following table summarizes the remedial alternatives considered in the **FS**. Estimated costs are presented, including capital, operation and maintenance (O&M), and total present worth costs.

Alternatives Evaluation Criteria

The following is a summary of the nine Superfund-mandated criteria used to balance the pros and cons of the remedial alternatives. The **FS** alternatives were evaluated using the first seven criteria. After comments from the

Remedial Alternatives	Components	Comments
Alternative S1: No Action	None, except mandatory five-year site reviews.	This alternative is not expected to be fully protective of human health and the environment. Capital Cost = \$0 O&M Cost (Present Worth) = \$89,600 Total Present Worth Cost = \$89,600
Alternative S2: Institutional Controls With Permeable Cover	Place restrictions on excavation and handling of impacted soils as well as future development of the site. Testing would be required for disposal of impacted soil. Maintain existing permeable cover (soil/gravel/asphalt) over contaminated soil. The permeable cover would be maintained as required by Connecticut regulations. Groundwater monitoring for potentially mobile contaminants present in Site 7 soil would be conducted as part of the Basewide groundwater remedy. Conduct five-year site reviews.	Under this alternative human health and the environment would be protected through institutional controls and a permeable cover that restrict excavation and exposure to Site 7 impacted soil. However, this alternative does not address the possibility of soil contamination migrating to the groundwater where it could cause potential human health or ecological impacts. Capital Cost = \$6,250 O&M Cost (Present Worth) = \$91,750 Total Present Worth Cost = \$98,000
Alternative S3: Excavation and Off-Site Disposal	Delineation of contaminated soil and characterize the septic tank contents. Excavate, characterize, transport, and dispose/recycle all contaminated soil to residential reuse standards and septic tank (if necessary) offsite. Conduct verification sampling. Perform site restoration.	Under this alternative human health and the environment would be protected since the contaminated soil and septic tank would be removed from the site and disposed properly. Capital Cost = \$440,200 O&M Cost = \$0 Total Present Worth Cost = \$440,200

State of Connecticut and public are received, the alternatives will be compared using the last two criteria to select the final remedy for Site 7, OU8.

1. **Overall protection of human health and the environment:** The alternative should protect human health as well as plant and animal life on and near the site.
2. **Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):** The alternative should meet applicable and relevant and appropriate federal and State environmental statutes, regulations, and requirements.
3. **Long-term effectiveness and permanence:** The alternative should maintain reliable protection of human health and the environment over time.
4. **Reduction of toxicity, mobility, or volume through treatment:** CERCLA contains the statutory preference that the selected alternative should use treatment to permanently reduce the level of toxicity of contaminants at the site, the spread of contaminants away from the **source of contamination**, or the amount of **contamination** at the site.
5. **Short-term effectiveness:** The alternative should minimize short-term hazards to workers, residents, or the environment during implementation of the remedy.
6. **Implementability:** The alternative should be technically feasible, and the materials and services needed to implement the remedy should be readily available.
7. **Cost:** Capital costs, annual operation and maintenance costs, and their associated net present values of all alternatives retained for detailed analysis shall be compared.
8. **State acceptance:** The State environmental agencies should agree with the proposed remedy.
9. **Community acceptance:** The community should agree with the proposed remedy. Community acceptance is based on comments received during the public meeting and public comment period.

The Navy's Proposed Remedy

The Navy's proposed remedy for Site 7 soil is Remedial Alternative S3. Alternative S3 meets all of the RAOs by

removing the contaminated soil from the site to meet residential reuse standards. This remedial alternative consists of four major components; (1) Finalize delineation of soil **contamination** and characterize the contents of septic tank, (2) Excavate, characterize, transport, and dispose contaminated soil and septic tank (if necessary), (3) Collect verification samples to ensure removal of all contaminated soil, and (4) Restore site. This alternative can be completed within 1.5 years after the start of design activities.

To finalize delineation of soil **contamination** and verify the contents of the septic tank, additional soil borings (approximately 15) will be advanced and soil/waste samples (approximately 30) will be collected to determine the horizontal and vertical extent of contaminated soil and the nature of the contents of the septic tank. A sampling plan will be developed to provide the details of the pre-design sampling program.

Following delineation, **excavation** equipment will be used to excavate the contaminated soil from OU8 (approximately 1,600 cubic yards of PAH-contaminated soil and 90 cubic yards of benzene-, chlorobenzene-, and dichlorobenzene-contaminated soil) and the septic tank, if necessary. Approximately 200 cubic yards of clean soil will also need to be excavated to ensure stable sidewalls of the **excavation**. The excavated soil will be temporarily stockpiled and characterized to determine the appropriate disposal facility. Upon determination of the appropriate disposal facility, the contaminated soil and the septic tank, if necessary, will be loaded into trucks and transported to the off-site disposal facility.

After the **excavation** of contaminated soil and the septic tank, if necessary, soil samples will be collected from the bottom and sidewalls of each **excavation** area and analyzed to verify the removal of the COCs or to verify that COCs remaining at the site are at concentrations less than the remedial goals.

Lastly, after the contaminated soil and the septic tank, if necessary, have been excavated and removed from OU8, clean soil will be brought to the site to backfill the **excavations**. Following the backfilling of the **excavations**, the surface will be returned to pre-excavation conditions (grassed, paved, or gravel).

The U.S. Environmental Protection Agency (EPA) and Connecticut Department of Environmental Protection (CTDEP) concur with the Navy's Proposed Remedy. Based on information currently available, the Navy believes the Preferred Alternative meets the threshold criteria and pro-

vides the best balance of tradeoffs among the other alternatives with respect to balancing and modifying criteria. The Navy expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): a. be protective of human health and the environment; b. comply with ARARs; c. be cost-effective; d. utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and e. satisfy the preference for treatment as a principal element, or explain why the preference for treatment will not be met.

The Navy also recommends No Further Action for the Site 14 soil in OU8. By removing all debris and contaminated soil with concentrations above the remedial goals during the NTCRA, the Navy addressed all site-related risks.

Glossary of Technical Terms

Applicable or Relevant and Appropriate Requirements (ARARs): The federal and state environmental rules, regulations, and criteria that must be met by the selected remedy under Superfund.

Basewide Groundwater Operable Unit Remedial Investigation (BGOURI) Update/Feasibility Study (FS): A Remedial Investigation report describes the site, documents the nature and extent of contaminants detected at the site, and presents the results of the risk assessment. An FS report presents the development, analysis, and comparison of remedial alternatives.

Contamination: Any physical, biological, or radiological substance or matter that, at a certain concentration, could have an adverse effect on human health and the environment.

Excavation: Earth removal with construction equipment such as backhoe, trencher, front-end loader, excavator, etc.

Feasibility Study (FS): A report that presents the development, analysis, and comparison of remedial alternatives.

Groundwater: Water found beneath the earth's surface. Groundwater may transport substances that have percolated downward from the ground surface as it flows towards its point of discharge.

Installation Restoration (IR) Program: The purpose of the program is to identify, investigate, assess, characterize, and clean up or control releases of hazardous sub-

stances, and to reduce the risk to human health and the environment from past waste disposal operations and hazardous material spills at Navy activities in a cost-effective manner.

milligrams per kilogram (mg/kg): One part of contaminant in a million parts of a solid material.

Operable Unit (OU): Operable units are site management tools that define discrete steps towards comprehensive actions as part of a Superfund site cleanup. They can be based on geologic portions of a site, specific site problems, initial phases of action, or any set of actions performed over time or concurrently at different parts of the site.

Polynuclear Aromatic Hydrocarbons (PAHs): High molecular weight, relatively immobile, and moderately toxic solid organic chemicals featuring multiple benzenic (aromatic) rings in their chemical formula. Typical examples of PAHs are benzo(a)anthracene and benzo(a)pyrene.

Record of Decision (ROD): An official document that describes the selected Superfund remedy for a site. The ROD documents the remedy selection process and is issued by the Navy and EPA following the public comment period.

Remedial Investigation (RI): A report which describes the site, documents the nature and extent of contaminants detected at the site, and presents the results of the risk assessment.

Responsiveness Summary: A summary of written and oral comments received during the public comment period, together with the Navy's and EPA's responses to these comments.

Risk Assessment: Evaluation and estimation of the current and future potential for adverse human health or environmental effects from exposure to contaminants.

Sediment: Soil, sand, and minerals typically transported by erosion from soil to the bottom of surface water bodies such as streams, rivers, ponds, and lakes.

Source: Area(s) of a site where contamination originates.

Surface soil: Soil, sand, and minerals typically found within the top 12-inches of the earth's surface.

Subsurface soil: Soil, sand, and minerals typically found deeper than the top 12-inches of the earth's surface.

The Public's Role in Alternative Selection

Community input is integral to the selection process. The Navy and regulatory agencies will consider all comments in selecting the remedial action prior to signing the ROD. The public is encouraged to participate in the decision-making process.

This Proposed Plan for OU8 is available for review, along with supplemental documentation, at the following Information Repositories:

Groton Public Library	Hours:
52 Newtown Road	Mon. - Thru.: 9:00am - 9:00pm
Groton, CT 06340	Fri.: 9:00am - 5:30pm
(860) 441-6750	Sat.: 9:00am - 5:00pm
	Sun.: noon - 6:00pm

Bill Library	Hours:
718 Colonel Ledyard	Mon. - Thru.: 9:00am - 9:00pm
Highway	Fri. & Sat.: 9:00am - 5:00pm
Ledyard, CT 06339	Sun.: 1:00pm - 5:00pm
(860) 464-9912	

For further information, please contact:

Mr. Mark Evans, Remedial Project Manager
Naval Facilities Engineering Command
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10 Industrial Highway
Mail Stop 82, Code 1823/ME
Lester, Pennsylvania 19113-2090
Tel: (610) 595-0567 ext. 162
e-mail: mark.evans1@navy.mil

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e-mail: griffinm@cnme.navy.mil

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Mark Lewis
Environmental Analyst 3
Connecticut Department of Environmental Protection
Eastern District Remediation Program
Planning & Standards Division
Bureau of Waste Management
79 Elm Street
Hartford, CT 06106-5127
Tel: (860) 424-3768
e-mail: mark.lewis@po.state.ct.us

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for OU8 at Naval Submarine Base – New London is important to the Navy. Comments provided by the public are valuable in helping the Navy select the final clean-up remedy for this site.

You may use the space below to write your comments, then fold and mail. Comments must be postmarked by August 17, 2004. Comments can be submitted via mail or e-mail and should be sent to either of the following addresses:

Mr. Mark Evans, Remedial Project Manager
Naval Facilities Engineering Command
Engineering Field Activity Northeast
10 Industrial Highway
Mail Stop 82, Code 1823/ME
Lester, Pennsylvania 19113-2090.
Tel: (610) 595-0567 ext. 162
e-mail: mark.evans1@navy.mil

Ms. Melissa Griffin
Installation Restoration Manager
Naval Submarine Base - New London
Building 439
Groton, CT 06349-5039
Tel: (860) 694-5191
e-mail: griffinm@cnrne.navy.mil

If you have any questions about the comment period, please contact Mr. Mark Evans at (610) 595-0567 ext. 162.

Name _____

Address _____

City _____

State _____ Zip _____

Telephone _____

PUBLIC NOTICE

PUBLISHER'S CERTIFICATE

State of Connecticut)
County of New London,) ss. New London

On this 16th day of July, 2004,

Personally appeared before the undersigned, a
Notary Public within and for said County and
State, Kimberlee R. Butler, Legal Advertising Clerk,
of THE DAY, a daily newspaper published
at New London, County of New London, State of
Connecticut, who being duly sworn, states on
oath, that the Order of Notice in the case of
LEGAL 383 PUBLIC NOTICE
a true copy of which is hereunto annexed, was
published in said newspaper in its issue(s) of
07/16/2004

Kimberlee R. Butler

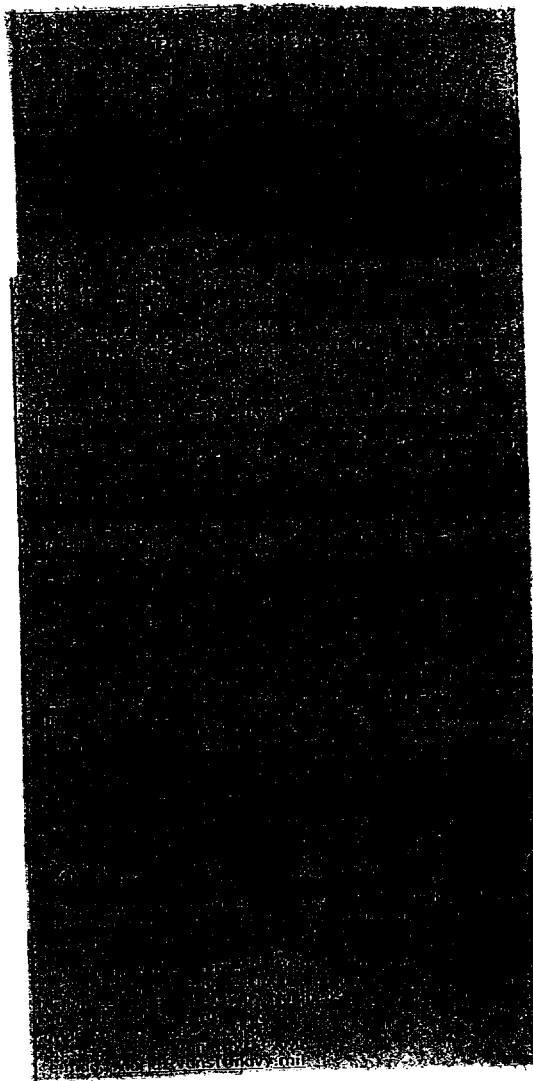
Subscribed and sworn to before me

this 16th day of July, 2004

Lorraine Marten
Notary Public

My commission expires

9-30-2008



APPENDIX B

**STATE OF CONNECTICUT
CONCURRENCE LETTER**

**NTCRA CONFIRMATION
SAMPLE RESULTS**

**STATE OF CONNECTICUT
CONCURRENCE LETTER**



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

79 ELM STREET HARTFORD, CONNECTICUT 06106

PHONE: (860) 424-3001



Mr. J. Rocque, Jr.
Commissioner

September 30, 2004

Ms. Susan Studlien, Director
U.S. Environmental Protection Agency
Office of Site Remediation and Restoration
1 Congress St.
Suite 1100 (HIO)
Boston, MA 02114-2023

Sean P. Sullivan, Jr.
Captain, USN
Commanding Officer
Naval Submarine Base New London
Box 00
Groton, CT 06349

Re: State Concurrence with Remedy for Soil at Site 7 (Torpedo Shops) and Site 14 (Overbank Disposal Area Northeast)- Naval Submarine Base New London, Groton, Connecticut

Dear Captain Sullivan and Ms. Studlien:

The Connecticut Department of Environmental Protection (CTDEP) concurs with the remedy selected by the EPA and the Navy for soil at Site 7 (Torpedo Shops) and Site 14 (Overbank Disposal Area Northeast), Naval Submarine Base New London, Groton, Connecticut. The remedy is described in detail in the proposed plan dated July 2004, and in the draft Record of Decision dated September 2004.

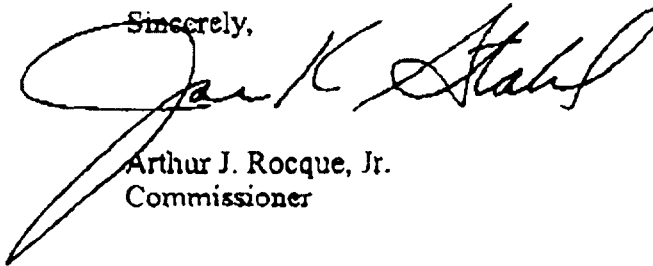
At Site 7 (Torpedo Shops) the Navy plans to remove a septic tank and excavate approximately 1,900 cubic yards of soil contaminated with polynuclear aromatic hydrocarbons and volatile organic compounds. The Navy will ship the excavated material offsite for disposal at an approved facility.

The Navy plans to take no further action at Site 14 (Overbank Disposal Area Northeast). The Navy removed approximately 270 tons of debris and contaminated soil from Site 14 in 2001 under a Non-Time Critical Removal Action. The 2001 removal action addressed all soil with contaminant concentrations in excess of the pollutant mobility and direct exposure criteria specified in the State's Remediation Standard Regulations. (Regulations of Connecticut State Agencies, Sections 22a-133k-1 to k-3).

State Concurrence- Sites 16 & 18
Page 2 of 2

We look forward to working with the Navy and the US Environmental Protection Agency toward continued remediation at the Naval Submarine Base.

Sincerely,

A handwritten signature in black ink, appearing to read "Arthur J. Rocque, Jr.", written over the word "Sincerely,".

Arthur J. Rocque, Jr.
Commissioner

AJR:MRL

C: Mr. Mark Evans, Remedial Project Manager
Naval Facilities Engineering Command
Engineering Field Activity Northeast
10 Industrial Highway
Mail Stop 82, Code 1823/ME
Lester, PA 19113-2090

Ms. Kymberlee Kockler, Remedial Project Manager
US Environmental Protection Agency- Region 1
1 Congress St.
Suite 1100 (HBT)
Boston, MA 02114-2023

**NTCRA CONFIRMATION
SAMPLE RESULTS**

**U.S. NAVY ENGINEERING FIELD ACTIVITY NORTHEAST
REMEDIAL ACTION CONTRACT (RAC)
CONTRACT NO. N62472-99-D-0032
CONTRACT TASK ORDER NO. 0063**

**FINAL REMOVAL ACTION REPORT
FOR OVER BANK DISPOSAL AREA NORTHEAST REMEDIATION
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT**

February 2002

Prepared by

Foster Wheeler Environmental Corporation
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Pages Affected
All

APPENDIX A

Laboratory Analytical Data

OBDA NE Laboratory Results

	Connecticut DEP Criteria		Area A Downstream/ OBDA RGs									
	Pollutant Mobility GB		SED/SOIL	OBDANE-BA-SS-A1	OBDANE-BA-SS-A1 (SPLP)	OBDANE-BA-SS-A2	OBDANE-BA-SS-A3	OBDANE-BA-SS-A4	OBDANE-BA-SS-A5	OBDANE-BA-SS-A6	OBDANE-BA-SS-A7	OBDANE-BA-SS-A8
Pesticides	(mg/Kg)	(mg/Kg)	(mg/Kg)									
Dieldrin	0.007	0.007	0.045 / 0.57	U	-	U	U	U	U	U	U	U
4,4'-DDE	NE	NE	NE	0.0053	-	0.0028	U	U	U	U	U	U
4,4'-DDD	NE	NE	NE	0.0026	-	0.0018	U	U	U	U	U	U
4,4'-DDT	NE	NE	NE	0.0099	-	0.0098	U	U	U	U	U	U
DDTr	NE	NE	2.0 / 5.0	0.0178	-	0.0144	U	U	U	U	U	U
Endrin	NE	NE	NE	U	-	U	U	0.0026	U	U	U	U
Priority Pollutant Metals	(mg/L)	(mg/Kg as 20 x mg/L)	(mg/Kg)									
Antimony	0.06	1.2	NE	U	-	U	0.6	U	0.54	U	U	U
Arsenic	0.5	10	6.1	3.7	-	1.8	2.3	2.7	2.2	2	1.8	1.4
Beryllium	0.04	0.8	2.1	0.25	-	0.12	0.12	0.26	0.18	0.12	0.13	0.13
Cadmium	0.05	1	9.6	U	-	U	U	U	U	U	U	U
Chromium (total)	0.5	10	NE	40.6	0.0169	6	4.8	9.1	4.7	5.4	6.4	6.2
Copper	13	260	NE	40.6	-	8	7.9	12.8	7	7	8.9	8.2
Lead	0.15	3	218	22.2	0.0551	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Mercury	0.02	0.4	NE	0.29	-	0.1	0.05	0.09	0.05	0.05	0.04	0.04
Nickel	1	20	NE	6.5	-	3.6	3.2	5.5	3.1	3.6	3.4	3.4
Selenium	0.5	10	NE	U	-	U	U	U	U	U	U	U
Silver	0.36	7.2	NE	U	-	U	U	U	U	U	U	U
Thallium	0.05	1	NE	U	-	0.54	0.68	U	0.69	U	0.69	U
Zinc	50	1000	410	56	-	18.8	16.6	46.8	16.3	18.9	34.7	16.8

Note: Results in mg/Kg except for SPLP samples which are mg/L.
 Bold and gray numbers for results exceeding 20 X SPLP criteria.
 U: Undetected below the Method Detection Limit
 NE: Not Established
 - Not analyzed

OBDA NE Laboratory Results										
	Connecticut DEP Criteria		Area A Downstream/ OBDA RGs	OBDA NE-BA SS-A9	OBDA NE-BA SS-A9 (SPLP)	OBDA NE-BA SS-A10	OBDA NE-BA SS-A10 (SPLP)	OBDA NE-BA SS-TS	OBDA NE-BA SS-TS (SPLP)	OBDA NE-BA SS-FD
	Pollutant Mobility GB		SED/SOIL							
Pesticides	(mg/Kg)	(mg/Kg)	(mg/Kg)							
Dieldrin	0.007	0.007	0.045 / 0.57	U	-	U	-	U	-	U
4,4'-DDE	NE	NE	NE	0.004	-	0.004	-	0.009	-	0.01
4,4'-DDD	NE	NE	NE	U	-	U	-	U	-	U
4,4'-DDT	NE	NE	NE	0.011	-	0.012	-	0.011	-	0.01
DDTr	NE	NE	2.0 / 5.0	0.015	-	0.016	-	0.02	-	0.02
Endrin	NE	NE	NE	U	-	U	-	U	-	U
Priority Pollutant										
Metals	(mg/L)	(mg/Kg as 20 x mg/L)	(mg/Kg)							
Antimony	0.06	1.2	NE	0.79	-	1.1	-	0.72	-	0.83
Arsenic	0.5	10	8.1	3.8	-	5.1	-	2.5	-	2.8
Beryllium	0.04	0.8	2.1	0.28	-	0.3	-	0.2	-	0.26
Cadmium	0.05	1	9.6	U	-	0.34	-	U	-	U
Chromium (total)	0.5	10	NE	0.0242	-	0.0324	-	8.6	-	18.5
Copper	13	260	NE	26.9	-	39.7	-	14.5	-	18.5
Lead	0.15	3	218	0.0868	-	0.097	-	0.0443	-	0.18
Mercury	0.02	0.4	NE	0.0167	-	0.009	-	0.18	-	0.18
Nickel	1	20	NE	8.4	-	7.6	-	5.2	-	6.3
Selenium	0.5	10	NE	U	-	0.25	-	U	-	U
Silver	0.36	7.2	NE	U	-	U	-	U	-	U
Thallium	0.05	1	NE	0.49	-	U	-	U	-	U
Zinc	50	1000	410	70.6	-	102	-	38.3	-	47.1

Note: Results in mg/Kg except for SPLP samples which are mg/L.
 Bold and gray numbers for results exceeding 20 X SPLP criteria.
 U: Undetected below the Method Detection Limit
 NE: Not Established
 - Not analyzed

APPENDIX C

PUBLIC MEETING TRANSCRIPT

1 PROPOSED PLANS FOR
2 SITE 3 - NEW SOURCE AREA SOIL;
3 SITES 7 AND 14 SOIL (OU8); AND
4 SITES 16 AND 18 SOIL (OU11)

5 -----

6 Public hearing taken at the
7 Best Western Olympic Inn, 360 Route
8 12, Groton, Connecticut, before
9 Clifford Edwards, LSR, Connecticut
10 License No. SHR.407, a Professional
11 Shorthand Reporter and Notary
12 Public, in and for the State of
13 Connecticut on July 28, 2004, at
14 6:41 p.m.

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1 APPEARANCES:

2

3 COREY A. RICH, PE

4 TETRA TECH NUS, INC.

5 611 Andersen Drive

6 Pittsburgh, PA 15220

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8

9 MARK D. EVANS

10 NAVFAC

11 10 Industrial Highway

12 Mail Stop #82

13 Lester, PA 19113

14

15

16 ALSO PRESENT:

17 KYMBERLEE KECKLER

18 MELISSA COKAS

19 FELIX PROKOP

20 LARRY GIBSON

21 MARK LEWIS

22

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PROCEEDINGS

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MR. EVANS: Corey was going to give some technical presentations on each individual site real quick -- well, a little quicker now.

At the end of that presentation, we were going to give anybody that wanted to actually make a formal comment that would actually be part of the public record a chance to do that.

At that point, you can stand, state your name so that the stenographer can get that and it will actually be part of the public record. Okay?

MR. RICH: Thank you, Mark.

As you're all aware, my name is Corey Rich. I work with Tetra Tech NUS. We're a consultant for the Navy. We're here tonight to talk about three proposed plans that were issued back on July 16.

1 The three proposed plans
2 cover the soil operable units at Site
3 3, Sites 7 and 14, which are listed as
4 OU8 -- which is designated as OU8,
5 Sites 16 and 18 soil, which are
6 designated as OU11.

7 As Mark said, we're going
8 to go through some technical
9 presentations on the three proposed
10 plans and I'm going to start off with
11 a quick review of the regulatory
12 process.

13 The Comprehensive
14 Environmental Response Compensation
15 Liability Act, or CERCLA, has a set
16 process we need to go through. These
17 sites we've investigated and are here
18 to discuss -- are covered under
19 CERCLA.

20 The first step is to go
21 through a preliminary assessment or
22 site inspection, let's us know if
23 there's a potential problem at that
24 site.

1 If that shows that there's
2 an issue, we go into a remedial
3 investigation which is a more in-depth
4 look at that site, and what you try
5 and do is find out what's there, what
6 type of contamination and who will it
7 impact or what.

8 With a feasibility study,
9 we try to determine what we do with
10 what's there, determine the approach
11 for cleaning it up.

12 Once we go through and
13 determine that approach, we need to
14 present that information in a proposed
15 plan, which we're here to do tonight,
16 and we take the multiple alternatives
17 that were looked at in the FS and
18 select one of those and present it to
19 the public.

20 We need to then formally
21 document that in a record of decision
22 and incorporate any public input we
23 got during our public meeting with a
24 Responsiveness Summary.

1 After we come up with our
2 alternative and document it in the
3 ROD, we have to come up with a
4 remedial design and how we are going
5 to implement that remedy and actually
6 go out and do the remedy itself during
7 remedial action, and then we have to
8 monitor things through operations and
9 maintenance.

10 Just quickly give you some
11 more in-depth information on the
12 proposed plan and record of decision.
13 The proposed plan is a document used
14 to facilitate public involvement in
15 the CERCLA process.

16 It presents the lead
17 agencies preferred alternatives,
18 presents the alternatives evaluated
19 and the reasons for recommending that
20 preferred alternative, and it's a
21 public participation requirement under
22 CERCLA and the NCP.

23 The record of decision is
24 a legal document that's prepared by

1 the lead agency and with the support
2 of the -- support agencies, in this
3 case, the EPA and the State of
4 Connecticut, and it certifies that the
5 remedy was selected following the
6 CERCLA and NCP process.

7 It provides the technical
8 rationale and background information
9 that's provided in the admin record
10 and identifies the engineering
11 components and outlines remedial
12 actions and objectives and cleanup
13 goals for the remedy. And it's a
14 tool to explain to the public the
15 problems the remedy seeks to address
16 and the rationale for its selection.

17 I'll go through the first
18 site, Site 3, new source area. Just
19 some brief details about the site.
20 It's located in the northern part of
21 the sub base. Hopefully you can see
22 this map of the sub base over here.

23 This is the northern end
24 of the sub base. Site 3 itself is

1 this area. And Site 3 new source area
2 is just a small area right about
3 there.

4 It's about six-hundredths
5 of an acre.

6 It was an abandoned
7 disposal area. Some rusted drums and
8 wire cable are visible at the site.
9 It was detected or found during the
10 OU3 Site 3 remedial action.

11 It's petroleum
12 contamination was found at that time
13 and the site was not cleaned up at
14 that time because we needed to
15 determine what the nature and extent
16 of that contamination was.

17 But there were some
18 temporary measures put into place to
19 minimize further contaminant migration
20 until we could study the site and
21 implement the remedy.

22 Mark, can you show us --

23 This is just a blowup
24 really of our larger scale figure over

1 there. Mark's pointing to the new
2 source area there just to give you an
3 idea. There's the torpedo shops.
4 This is the Area A Downstream, Site 3.
5 Stream 5 of the Area A Downstream runs
6 adjacent to Site 3 new source area.

7 Just minimize that.

8 Okay. This is a picture
9 of the site.

10 You can see the rusted
11 drum here and here, and some wire
12 cable there. Just another view of the
13 site looking in the southerly
14 direction. Stream 5 is right here.
15 This is Triton Road, and the golf
16 course is over there.

17 Just a quick summary of
18 the nature and extent of
19 contamination. The site was
20 investigated during a data gap
21 investigation. The data and results
22 were presented in the basewide ground
23 water operable unit remedial
24 investigation update and feasibility

1 study that was finalized in July of
2 2004.

3 In general, the main
4 contamination found was TPH, or
5 petroleum contamination, and we did
6 see some stained soil and some free
7 petroleum oil on the water surface out
8 there. We've estimated about 385
9 cubic yards is contaminated and will
10 need to be addressed.

11 We also found some
12 polynuclear aromatic hydrocarbons, or
13 PAHs, in a small area just adjacent to
14 Triton Road, which was a surface soil
15 sample that we had.

16 And in evaluation of that
17 some more, we determined it was
18 related to the actual asphalt
19 pavement. We may have picked up a
20 little asphalt in our sample or
21 something like that that skewed our
22 results.

23 We also saw some low level
24 concentrations of some other

1 compounds, volatile organics, some
2 pesticides, one PCB, and some
3 inorganics.

4 Show the slide. Just
5 maximize that.

6 This is a cross-section
7 through the site itself. That
8 disposal area is up here.

9 This is Stream 5, Triton
10 Road.

11 What we have found is
12 there's kind of a smear zone of
13 contamination right along the bedrock
14 interface and water table.

15 Looks like some oil was
16 released from those rusted drums and
17 has migrated into the subsurface and
18 down along that bedrock interface.

19 We went through a risk
20 assessment for this site, both
21 human health and ecological risk
22 assessments. Generally the only thing
23 we found there was TPH or petroleum.

24 And there were generally

1 no risks for the contaminants other
2 than TPH, but the TPH did exceed
3 Connecticut standards which shows a
4 potential issue there. It poses both
5 a direct exposure concern and a
6 contaminant migration concern.

7 We also looked at eco
8 risks and we didn't really see any
9 significant risks from the non-TPH
10 contaminants out there, but with there
11 being some mobile free product there,
12 that would pose a potential issue to
13 the ecological receptors.

14 So the overall results of
15 the risk assessment showed that TPH
16 was our main contaminant of concern.

17 So we went into a
18 feasibility study to determine the
19 appropriate approach for addressing
20 the issues, the TPH contamination, and
21 basically we want to protect current
22 receptors.

23 That would be construction
24 workers, somebody out their digging,

1 putting in sewer lines, something like
2 that, current employees or a
3 trespasser from any exposure to the
4 contaminated soil.

5 We also want to protect
6 any groundwater that's at the site.
7 We also want to protect any aquatic
8 ecological receptors in Stream 5
9 adjacent to the site, and also protect
10 any potential future residents that
11 may live in that area if the base
12 would subsequently be closed or
13 something like that.

14 When we went into the
15 feasibility study, we looked at
16 general response actions or main
17 approaches for addressing this
18 contamination and then looked at
19 process options and technologies and
20 went through a screening process and
21 honed it down to three different
22 alternatives that would be appropriate
23 for the TPH contamination out there.

24 We have to include a no

1 action alternative under CERCLA for
2 comparison purposes. We looked at a,
3 basically a passive alternative of
4 institutional controls, just limiting
5 access to the site.

6 Because it is petroleum,
7 it naturally degrades, we have some
8 natural degradation that would occur
9 on the site which hopefully would
10 eventually clean up on its own. Just
11 by restricting access, we would
12 eliminate any risks to the public or
13 environment and do some limited
14 monitoring just to confirm that.

15 Or our third alternative
16 is a more aggressive approach: We
17 actually go out and excavate and
18 remove the contaminated soil and
19 dispose of that off site, get rid of
20 the problem.

21 Go back one second.

22 Each of these
23 alternatives, I have a present worth
24 cost at the end of them.

1 Obviously no action would
2 be zero dollars.

3 Institutional controls
4 would run about \$124,000 over a
5 30-year life cycle, and excavation and
6 off-site disposal would be about
7 \$286,000.

8 Each of those alternatives
9 go through an evaluation or evaluation
10 process against seven main criteria
11 and then two modifying criteria.
12 Within the FS itself, these seven
13 criteria are evaluated -- or each
14 alternative is evaluated with these
15 criteria.

16 These threshold criteria
17 are mandatory; the alternatives need
18 to meet these. The balancing criteria
19 are more subjective or qualitative
20 evaluation criteria.

21 And then the modifying
22 criteria of state acceptance and
23 community acceptance provides the Navy
24 with input from both the state and the

1 public on their alternatives and helps
2 keep all parties informed and involved
3 in the decision-making process.

4 For Site 3, based on that
5 evaluation and regulatory input -- I
6 guess let me take one step back.

7 The petroleum
8 contamination that was found at this
9 site isn't directly covered under
10 CERCLA, and there were no risks from
11 the CERCLA-related contaminants at the
12 site.

13 So what the Navy is
14 proposing under CERCLA is no further
15 action for this site because there
16 were no risks from the non-TPH
17 contaminants at the site.

18 But they understand
19 there's a concern from the petroleum
20 and they have selected alternative S3,
21 which is excavation and off-site
22 disposal for the contaminated soil,
23 and that cleanup would be done under
24 the Connecticut regulations and

1 meeting a TPH of 500 milligrams per
2 kilogram and eliminating the mobile
3 free product out there.

4 The 500 milligrams per
5 kilogram level would meet residential
6 reuse requirements.

7 And as part of that
8 alternative, they would go in and do
9 some minor additional characterization
10 just to clarify the size of the area,
11 the volume. They would go through
12 that predesign investigation and then
13 do an actual design, remedial design
14 for the site.

15 It's anticipated they will
16 need to construct a temporary road
17 to maintain access to the torpedo
18 shops and the weapons center which are
19 located east on Triton Road.

20 They would go in and
21 excavate the contaminated soil,
22 characterize it with some
23 verification -- with testing and then
24 they would take it off site and

1 dispose of it. There's a possibility,
2 if they can, they would recycle it
3 through asphalt paving plants or
4 something like that.

5 They might be able to
6 recycle that material.

7 In the bottom of the
8 excavation itself, they will collect
9 verification samples to make sure they
10 meet the 500 milligram per kilogram
11 cleanup goal, and they'll restore the
12 site to its preexcavation conditions.

13 The whole process of
14 design and remediation is anticipated
15 to take a year and a half. The actual
16 in-field excavation work would take
17 about two to three months.

18 So moving on to the next
19 site, Site 7, which is part of
20 Operable Unit 8, there are several
21 buildings that are designated as the
22 torpedo shops in the northern portion
23 of New London. The Navy conducts
24 maintenance activities at these

1 buildings for torpedos. They use
2 solvents and petroleum products.
3 Through that process, they store them
4 there and also use them.

5 Next slide. This is just
6 a picture of Building 325, one of the
7 larger buildings of the four and one
8 of the main areas where maintenance
9 activities are completed.

10 This is also a picture of
11 Building 450. Again, one of the
12 larger buildings where maintenance
13 activities are completed.

14 The site was investigated
15 During three different phases: The
16 Phase 1 RI back in the early '90s, the
17 Phase 2 RI in the mid '90s, and
18 basewide groundwater OU RI in early
19 2000.

20 Soil data was reevaluated
21 in our RI update and feasibility study
22 this year and, in general, we found
23 during our investigations two areas
24 of contamination, one being an area

1 contaminated with polynuclear aromatic
2 hydrocarbons, that being south of
3 Building 325.

4 And it looks like this is
5 related to some former leakage or
6 spillage of some fuel oil tanks in
7 that area, and it looks like there's
8 possibly 1,700 cubic yards of
9 contaminated soil in that area.

10 We also have on the
11 western side of Building 325 an area
12 of contamination or suspected
13 contamination. We found some
14 groundwater contamination in that area
15 just adjacent to a former septic tank
16 that was used until the early 1980s,
17 and it looks like there may be
18 residual contamination in that area
19 leaching into the groundwater and
20 causing a problem.

21 Excuse me. Yeah, we can
22 take a look at the figure.

23 This figure is from the
24 feasibility study and just shows those

1 two areas in a little more detail.

2 This is the PAH contamination area
3 with cross-hatching on it. We had two
4 hits generally in the subsurface.

5 This sample was from 1 to
6 3 feet, and this one is from 6 to 8
7 feet below -- no, that's 1 to 3 as
8 well.

9 Contaminant levels are
10 around 1,700 to 2,000 micrograms per
11 kilogram range, which exceed
12 Connecticut's cleanup goals.

13 And then the septic tank
14 area is over here. There was a septic
15 tank and that drained off into this
16 leach field, and we believe that that
17 historic septic tank is still in place
18 and maybe has some sludge or something
19 in there that's acting as a source.

20 We went through the risk
21 assessment process and the PAH soil
22 poses a potential contaminant
23 migration issue as well as potential
24 risks to human receptors, and the

1 solvent area causes a definite --
2 causes risks to human receptors
3 through groundwater at this point in
4 time. The soil data didn't confirm a
5 risk from the soil, but we're going to
6 confirm that information.

7 No significant ecological
8 risks based on the site. As you saw
9 on those pictures, most of the site is
10 paved. The ecological receptors
11 really don't have access to the site.

12 So our contaminants of
13 concern for the soil are the PAHs, the
14 benzo(a)anthracene, benzo(a)pyrene,
15 benzo(b)fluoranthene, and
16 indeno(1,2,3-cd)pyrene, and then the
17 solvents, the benzene, chlorobenzene,
18 and 1,4-dichlorobenzene.

19 The remedial action
20 objectives that we came up with, very
21 similar to the other ones that we had
22 for Site 3. We want to protect
23 current receptors from the
24 contaminated soil, protect the

1 groundwater from contaminants in the
2 soil leeching to it, protect any
3 aquatic receptors.

4 We generally didn't have
5 any of these main issues, but we still
6 wanted to state that we're protecting
7 them and we also want to protect any
8 future receptors if this facility
9 would be shut down and this would be
10 reused for residential purposes.

11 We have come up with three
12 very similar alternatives as we had
13 for Site 3 new source area, a
14 no-action, which is mandatory under
15 five-year reviews.

16 Because we had some additional
17 contaminants, CERCLA contaminants of
18 concern, we would have to do five-year
19 reviews under a no-action scenario and
20 that would give us a cost compared to
21 the Site 3 new source area which had
22 none.

23 Alternative 2 is a passive
24 institutional controls alternative

1 prohibiting access to the site,
2 allowing natural degradation to occur,
3 conducting our reviews and doing
4 periodic testing.

5 And then Alternative 3
6 would be excavation and off-site
7 disposal.

8 The cost for Alternative 2
9 is \$98,000.

10 Alternative 3,
11 approximately \$440,000.

12 We screened all the
13 alternatives with a similar set of
14 criteria, and the Navy's preferred
15 remedy for the soil at Site 7 is
16 Alternative S3, which is excavation
17 and off-site disposal.

18 They will do some
19 additional characterization to
20 finalize the delineation of the
21 contaminated soil, and they want to
22 locate and sample any contents in the
23 septic tank. That will be done as
24 part of a predesign investigation.

1 They'll conduct a remedial
2 design and then the actual remedial
3 action will include excavation,
4 characterization, transportation, and
5 disposal of the contaminated soil and
6 tank off site and verification
7 sampling to confirm that we've gotten
8 all the contaminated soil out of the
9 ground. Then restore the site and
10 similar time frames for the total
11 project duration and remedial action.

12 These are the remedial
13 goals for the soil at Site 7. These
14 goals are based on Connecticut
15 remediation standards. They meet both
16 direct exposure and contaminant
17 migration concerns.

18 Site 7 is one part of OU8.
19 The other part of Operable Unit 8 is
20 overbank disposal area northeast,
21 which is OBDANE for abbreviation.

22 Site 14 is located
23 adjacent to Sites 3 and 7. It was a
24 small disposal area where

1 miscellaneous waste was dumped over
2 the edge of a ravine in the past.
3 This is a picture of the site, I
4 believe in early or maybe late 2000
5 early 2001. This was after Stream 3
6 was remediated as part of the OU3
7 remedial effort.

8 The site was originally
9 investigated during two phases in the
10 early and mid 1990s. We found some
11 low level VOCs, volatile organic
12 compounds, PAHs and pesticides, and
13 some slightly higher levels of
14 inorganics, in particular, arsenic and
15 lead.

16 Taking that information
17 into the risk assessment, we didn't
18 see any significant risks to human
19 health related to those contaminants,
20 but we did see some risk to ecological
21 receptors because of those
22 contaminants of concern. So our
23 contaminants of concern for this site
24 were pesticides and inorganics, and

1 originally the Phase 2 RI recommended
2 that we do some further
3 characterization, but -- next slide.

4 The Navy opted to go in
5 and do a removal action at the site
6 and they performed an engineering
7 evaluation and cost analysis which is
8 a streamlined feasibility study and
9 then signed an action memorandum for
10 that site which is a kind of a
11 streamlined record of decision for a
12 removal action.

13 They went in and completed
14 that removal action in 2001. They
15 took out about 270 tons of debris and
16 contaminated soil and disposed of that
17 off site.

18 They selected remedial
19 goals for pesticides and inorganics
20 from both the State of Connecticut
21 criteria and previously selected
22 remedial goals that were used during
23 the Site 3 removal -- remedial action
24 that was conducted, and those Site 3

1 goals were based on ecological
2 receptors which was the concern that
3 was identified for Site 14.

4 You want to look at the
5 figure quick, Mark. If you go down
6 and fit the -- This figure just gives
7 you a plan view, and this line
8 outlines the limit of excavation for
9 the removal action. And this is
10 Stream 3, the stream that was visible
11 on that earlier figure. This is
12 upper pond. This is Triton Road.

13 And this picture shows us
14 postremoval action. That area has
15 been cleaned up, reseeded, and you can
16 still see some of the silt fence down
17 along the lower edge of the site.

18 So since the removal
19 action was done and all the debris and
20 contaminated soil has been removed,
21 the Navy proposes no further action
22 for this site under CERCLA and this
23 site will be written off then.

24 So that was OU8.

1 Now we are going to move
2 on to Operable Unit 11. This was
3 another proposed plan. The two sites
4 included are Sites 16, the hospital
5 incinerators, and site 18, the solvent
6 storage area of Building 33. I'll
7 talk about Site 16 first.

8 Site 16 consisted of two
9 locations where a mobile incinerator
10 was used next to the hospital.

11 Want to look at the figure
12 there, Mark?

13 The main hospital area is
14 Building 449. Based on best
15 information available, the incinerator
16 was used in this area and also over on
17 the edge of the parking lot in this
18 area back in the '80s, I guess, late
19 '70s time frame.

20 And it was -- the
21 incinerator was used to destroy
22 medical records and medical waste.
23 And from what everybody -- from all
24 records and information that we

1 have received, the ash was disposed of
2 off site at a municipal landfill. So
3 we weren't really expecting
4 significant issues at this site, but
5 we wanted to go through the process
6 and evaluate it.

7 These are just two
8 pictures of those areas that we
9 outlined on the plan view drawing.
10 This is Location A and this is
11 Location B.

12 This site was actually
13 looked at back in the early '80s under
14 the initial assessment study.

15 It was recommended at the
16 time to delay any further
17 investigation because it was still
18 operational and they were still using
19 it. They ceased operation in the
20 late '80s, early '90s, and we
21 investigated this site in early 2000.

22 Some soil samples were
23 collected at the site and analyzed for
24 organic compounds, pesticides, PCBs,

1 dioxins/furans, inorganics, and we
2 also did some leachability testing on
3 the soil samples.

4 We also went through risk
5 assessment, mainly a human health risk
6 assessment, and the data did not show
7 a significant risk to human receptors.
8 The site itself doesn't provide any
9 significant suitable ecological
10 habitat so we didn't conduct an
11 ecological risk assessment.

12 We did, through our data
13 screening, identify some potential
14 contaminant migration concerns with
15 contaminated soil possibly impacting
16 groundwater.

17 We took a look at some
18 background concentrations and the
19 leachability test results and used
20 that information to show there really
21 weren't any significant concerns
22 related to those potential
23 contaminants.

24 The Navy recommends no

1 further action for Site 16 soil based
2 on the information that's available.
3 And they will pursue that, no further
4 action.

5 Site 18, the other part or
6 other site included in Operable Unit
7 11, is located in the southern part of
8 New London just north of Sites 15
9 and 23. Just give you a quick look at
10 Site 18 is down here, Site 16 is up
11 here.

12 This figure shows you some
13 of the sample locations that were used
14 to evaluate the site, and then Site 15
15 is spent acid storage and disposal
16 area and the tank farm, Site 23, were
17 located south of the site.

18 The building was used for
19 storage of gas cylinders and 55-gallon
20 drums of solvents such as TCE or
21 trichloroethylene or dichloroethylene.
22 This gives you a picture, just an old
23 warehouse.

24 We investigated the site

1 in early 2000, collected soil samples,
2 analyzed them for broad range of
3 compounds and also did some
4 leachability tests and, in general, we
5 didn't find much contamination at all
6 in the soil out at the site. Some low
7 concentrations of volatile organic
8 compounds and polynuclear aromatic
9 hydrocarbon and some inorganics, but
10 this is one of the cleanest area on
11 the facility.

12 We didn't see any
13 significant risks to human health from
14 the building in general, and this
15 surrounding parking lot didn't provide
16 an ecological habitat so no ecological
17 risk assessments were completed. And
18 we didn't see any potential migration
19 issues from the contaminants found in
20 the site.

21 So the Navy's preferred
22 alternative for this site is no action
23 because no significant risk or
24 environmental concerns.

1 So those are the Navy's
2 preferred remedies. We are in the
3 middle of the public comment period
4 right now. The comment period started
5 on July 16 with the issuance of a
6 public notice in The Day newspaper and
7 we'll wind up on August 17.

8 We are currently
9 conducting the public meeting.

10 Once the public comment
11 period is over, if there are any
12 comments received, the Navy will put
13 together a responsiveness summary
14 which is formal responses to any of
15 the comments received and that
16 information will get incorporated into
17 the records of decision.

18 And we hope to have our
19 records of decision -- there will be
20 three separate ones associated with
21 these three proposed plans -- out in
22 the September to October 2004 time
23 frame.

24 Points of contact, these

1 Folks are all in attendance tonight:
2 Mr. Mark Evans provided our
3 introduction; Ms. Melissa Cokas is at
4 the subbase in charge of the
5 environmental program there; Ms.
6 Kymberlee Keckler from the EPA; and
7 Mr.
8 Mark Lewis from the State of
9 Connecticut.

10 That's the end of the
11 technical presentation. With no
12 comments during the presentation, do
13 we want to open the floor for any
14 formal comments from the public?

15 MR. GIBSON: Larry Gibson.
16 It was a very good and comprehensive
17 presentation, and I agree with all the
18 decisions that have been recommended
19 so for.

20 MR. EVANS: Thank you.

21 MR. PROKOP: For the record,
22 my name is Felix Prokop. I'm with the
23 Ledyard Health District. And we cover
24 the Town of Groton and, in the last

1 year or two, we cover Ledyard. In
2 early February, we have been taken
3 over as far as the environmental
4 health, the wells, the septic system,
5 and things like that, and I've been to
6 these meetings for years as you guys
7 know.

8 Was there any problems on
9 the Groton site or Ledyard site, you
10 know, Route 12, Military Highway, Long
11 Cove, any problem with well
12 contamination?

13 I remember some years ago,
14 some wells claimed they had a boron
15 problem. I remember -- I forgot, this
16 happened so many years ago, I did take
17 samples for boron for somebody in the
18 public and there didn't tend to be
19 much.

20 Was there any problem in
21 those wells that you know of?

22 MR. EVANS: No. There was,
23 I think it was way back in the Phase 1
24 RI that Atlantic completed, boron was

1 showing up at high levels in every
2 sample they took or a lot of samples
3 they took.

4 MR. PROKOP: Where were
5 they -- in what? On the base?

6 MR. EVANS: Mainly the
7 monitoring wells. I don't think they
8 ever saw any residential wells. Most
9 of the residential wells were gone by
10 then or starting to be decommissioned.

11 MR. PROKOP: Shortly after
12 that, the water line --

13 MR. EVANS: Then the water
14 line came up to Route 12, yeah. The
15 boron only showed up on that one round
16 and all indications were it was some
17 sort of lab contaminant screwup at
18 that time.

19 MR. PROKOP: But the best
20 you know, there was no contaminated
21 wells?

22 MR. EVANS: No. Remember up
23 on Route 12, there were some
24 residences up there on the northern

1 end that the Navy bought all that
2 property because it was in the
3 explosive arc?

4 Other than that, I don't
5 think we know of any residential wells
6 still.

7 MR. PROKOP: I mean, nobody
8 had to tie into public water
9 because -- because I went through
10 those records pretty thorough and I
11 didn't see anything.

12 MR. EVANS: I don't think so
13 either.

14 MR. PROKOP: Okay.

15 MR. EVANS: The other thing
16 is most of the groundwater flows from
17 the sub base towards the Thames River,
18 away from --

19 MR. RICH: There's very
20 little, if any, flow off property in
21 that direction.

22 MR. PROKOP: Was there any
23 surveys done in that area? Did
24 anybody do any spot wells in that

1 area?

2 MR. RICH: The Navy did.

3 MR. EVANS: Seems we did
4 during Phase 2. I think during Phase
5 2 RI, we did some of that work.

6 MR. PROKOP: Do you remember
7 where?

8 MR. EVANS: No.

9 MR. RICH: There's a report.

10 MR. EVANS: A separate
11 report?

12 MR. RICH: Yeah, that
13 Atlantic prepared. There's probably a
14 dozen or more public wells that were
15 sampled.

16 MR. PROKOP: Public or
17 private?

18 MR. RICH: Private, I'm
19 sorry.

20 MR. EVANS: Yeah, it's
21 coming back to me now that we did do a
22 report like that.

23 MR. PROKOP: That's all I
24 have.

1 MR. EVANS: Those reports
2 are probably in the admin record now.
3 We have updated that.

4 Did you put a copy of that
5 in the library yet?

6 MS. COKAS: No.

7 MR. EVANS: We've updated
8 those CDS.

9 I think we're up to 13 CDs
10 that have every document that we've
11 ever prepared. As soon as that's
12 finalized, those will be in the two
13 libraries.

14 You can go in there and
15 take a look at any of those documents.
16 It's pretty easy to search the stuff
17 on them.

18 MR. PROKOP: I'm the only
19 guy in the office without a computer.
20 Leave it that way. But I'm sure if
21 there was a problem, it would have
22 been --

23 MR. EVANS: We can use the
24 library's computers for those, right?

1 MS. COKAS: I believe so. I
2 wasn't there when they brought the
3 first set, so I didn't really talk to
4 the library about it.

5 MR. RICH: If that's all the
6 questions, then --

7 MR. EVANS: We'll stick
8 around a little bit if you guys want
9 to take a look at the posters and
10 stuff.

11 MR. RICH: The meeting is
12 adjourned.

13 (THEREUPON, THE HEARING WAS
14 CONCLUDED AT 7:24 P.M.)
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CERTIFICATE

I hereby certify that said hearing was taken by me stenographically in the presence of counsel and reduced to typewriting under my direction, and the foregoing is a true and accurate transcript of hearing.

I further certify that I am neither of counsel nor attorney to any of the parties of said cause, nor am I an employee of either party to said cause, nor of either counsel in said cause, nor am I interested in the outcome of said cause.

Witness my hand and seal as Notary

Public this 30th day of

August, 2004.

Clifford Edwards

Clifford Edwards

Notary Public

My commission expires: 9/30/2006

APPENDIX D

HUMAN HEALTH RISK ASSESSMENT RAGS PART D TABLES

LIST OF TABLES
RAGS PART D TABLE 9
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR SITE 7 COPCS

Table No.

REASONABLE MAXIMUM EXPOSURES

9.1.RME	Construction Worker
9.2.RME	Full-Time Employee
9.3.RMC	Child Resident
9.4.RME	Adult Resident

CENTRAL TENDENCY EXPOSURES

9.1.CTE	Construction Worker
9.2.CTE	Full-Time Employee
9.3.CTE	Child Resident
9.4.CTE	Adult Resident

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil/Subsurface Soil	Surface/Subsurface Soil	Torpedo Shops (Site 7)	Benzo(a)anthracene	9.7E-09	--	2.0E-09	--	1.2E-08	NA	--	--	--	--
			Benzo(a)pyrene	9.5E-08	--	2.0E-08	--	1.2E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1.2E-08	--	2.5E-09	--	1.4E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8.8E-09	--	1.8E-09	--	1.1E-08	NA	--	--	--	--
			Aroclor-1254	1.4E-08	--	2.2E-09	--	1.6E-08	Immune	0.02	--	0.004	0.03
			Antimony	--	--	--	--	--	Blood	0.08	--	--	0.08
			Arsenic	1.4E-07	--	6.9E-09	--	1.5E-07	Skin	0.02	--	0.001	0.02
			Cadmium	--	--	--	--	--	Kidney	0.01	--	0.0004	0.01
			Chromium	--	--	--	--	--	None Specified	0.02	--	--	0.02
			Manganese (soil)	--	--	--	--	--	CNS	0.005	--	--	0.005
			Thallium	--	--	--	--	--	None Specified	0.01	--	--	0.01
			Vanadium	--	--	--	--	--	None Specified	0.01	--	--	0.01
			Chemical Total	2.8E-07	--	3.5E-08	--	3.2E-07		0.2	--	0.005	0.2
		Exposure Point Total						3.2E-07					
Exposure Medium Total						3.2E-07						0.2	
Medium Total						3.2E-07						0.2	
Receptor Total	Receptor Risk Total					3.2E-07	Receptor HI Total					0.2	

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Full-Time Employee
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Torpedo Shops (Site 7)	Benzo(a)pyrene	8.7E-07	--	8.6E-07	--	1.7E-06	NA	--	--	--	--
			Dibenzo(a,h)anthracene	9.6E-08	--	9.5E-08	--	1.9E-07	NA	--	--	--	--
			Antimony	--	--	--	--	--	Blood	0.03	--	--	0.03
			Cadmium	--	--	--	--	--	Kidney	0.005	--	0.0008	0.006
			Manganese (Soil)	--	--	--	--	--	CNS	0.001	--	--	0.001
			Chemical Total	9.7E-07	--	9.6E-07	--	1.9E-06		0.04	--	0.0008	0.04
		Exposure Point Total						1.9E-06					0.04
	Exposure Medium Total							1.9E-06					0.04
Medium Total								1.9E-06					0.04
Receptor Total								Receptor Risk Total 1.9E-06					Receptor HI Total 0.04

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCS
REASONABLE MAXIMUM EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil/Subsurface Soil	Surface/Subsurface Soil	Torpedo Shops (Site 7)	Benzo(a)anthracene	1.4E-07	--	3.8E-08	--	1.8E-07	NA	--	--	--	--
			Benzo(a)pyrene	1.4E-06	--	3.8E-07	--	1.8E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	1.8E-07	--	4.8E-08	--	2.2E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.3E-07	--	3.5E-08	--	1.6E-07	NA	--	--	--	--
			Aroclor-1254	2.0E-07	--	4.2E-08	--	2.4E-07	Immune	0.06	--	0.01	0.07
			Antimony	--	--	--	--	--	Blood	0.2	--	--	0.2
			Arsenic	2.1E-06	--	1.3E-07	--	2.2E-06	Skin	0.05	--	0.003	0.06
			Cadmium	--	--	--	--	--	Kidney	0.03	--	0.001	0.03
			Chromium	--	--	--	--	--	None Specified	0.04	--	--	0.04
			Manganese (soil)	--	--	--	--	--	CNS	0.01	--	--	0.01
			Thallium	--	--	--	--	--	None Specified	0.03	--	--	0.03
			Vanadium	--	--	--	--	--	None Specified	0.03	--	--	0.03
			Chemical Total	4.2E-06	--	6.7E-07	--	4.8E-06		0.4	--	0.02	0.5
		Exposure Point Total						4.8E-06					
Exposure Medium Total						4.8E-06						0.5	
Medium Total						4.8E-06						0.5	
Receptor Total	Receptor Risk Total					4.8E-06	Receptor HI Total					0.5	

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCS
REASONABLE MAXIMUM EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil/Subsurface Soil	Surface/Subsurface Soil	Torpedo Shops (Site 7)	Benzo(a)anthracene	6.1E-08	--	2.1E-08	--	8.1E-08	NA	--	--	--	--
			Benzo(a)pyrene	6.0E-07	--	2.1E-07	--	8.0E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	7.5E-08	--	2.6E-08	--	1.0E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	5.5E-08	--	1.9E-08	--	7.4E-08	NA	--	--	--	--
			Aroclor-1254	8.6E-08	--	2.3E-08	--	1.1E-07	Immune	0.006	--	0.002	0.008
			Antimony	--	--	--	--	--	Blood	0.02	--	--	0.02
			Arsenic	9.1E-07	--	7.2E-08	--	9.8E-07	Skin	0.006	--	0.0005	0.006
			Cadmium	--	--	--	--	--	Kidney	0.003	--	0.0002	0.003
			Chromium	--	--	--	--	--	None Specified	0.004	--	--	0.004
			Manganese (soil)	--	--	--	--	--	CNS	0.001	--	--	0.001
			Thallium	--	--	--	--	--	None Specified	0.003	--	--	0.003
			Vanadium	--	--	--	--	--	None Specified	0.003	--	--	0.003
			Chemical Total	1.8E-06	--	3.7E-07	--	2.1E-06		0.05	--	0.002	0.05
		Exposure Point Total							2.1E-06				
Exposure Medium Total							2.1E-06					0.05	
Medium Total							2.1E-06					0.05	
Receptor Total		Receptor Risk Total					2.1E-06	Receptor HI Total				0.05	

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total	
Surface Soil/Subsurface Soil	Surface/Subsurface Soil	Torpedo Shops (Site 7)	Benzo(a)anthracene	3.2E-09	--	1.3E-10	--	3.4E-09	NA	--	--	--	--	
			Benzo(a)pyrene	3.2E-08	--	1.3E-09	--	3.3E-08	NA	--	--	--	--	
			Benzo(b)fluoranthene	4.0E-09	--	1.6E-10	--	4.2E-09	NA	--	--	--	--	
			Indeno(1,2,3-cd)pyrene	2.9E-09	--	1.2E-10	--	3.0E-09	NA	--	--	--	--	
			Aroclor-1254	4.6E-09	--	1.5E-10	--	4.8E-09	Immune	0.008	--	0.0003	0.008	
			Antimony	--	--	--	--	Blood	0.03	--	--	0.03		
			Arsenic	4.8E-08	--	4.6E-10	--	4.9E-08	Skin	0.008	--	0.00007	0.008	
			Cadmium	--	--	--	--	Kidney	0.004	--	0.00003	0.004		
			Chromium	--	--	--	--	None Specified	0.005	--	--	0.005		
			Manganese (soil)	--	--	--	--	CNS	0.002	--	--	0.002		
			Thallium	--	--	--	--	None Specified	0.004	--	--	0.004		
			Vanadium	--	--	--	--	None Specified	0.004	--	--	0.004		
			Chemical Total	9.5E-08	--	2.3E-09	--	9.7E-08		0.06	--	0.0004	0.06	
		Exposure Point Total						9.7E-08						0.06
Exposure Medium Total								9.7E-08						0.06
Medium Total								9.7E-08						0.06
Receptor Total			Receptor Risk Total					9.7E-08	Receptor HI Total					0.06

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Full-Time Employee
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Torpedo Shops (Site 7)	Benzo(a)pyrene	6.9E-08	--	1.4E-08	--	8.2E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2.2E-08	--	4.4E-09	--	2.7E-08	NA	--	--	--	--
			Antimony	--	--	--	--	--	Blood	0.008	--	--	0.008
			Cadmium	--	--	--	--	--	Kidney	0.001	--	0.00004	0.001
			Manganese (Soil)	--	--	--	--	--	CNS	0.0004	--	--	0.0004
			Chemical Total	9.1E-08	--	1.8E-08	--	1.1E-07		0.01	--	0.00004	0.01
		Exposure Point Total						1.1E-07					0.01
	Exposure Medium Total							1.1E-07					0.01
Medium Total								1.1E-07					0.01
Receptor Total								Receptor Risk Total 1.1E-07					Receptor HI Total 0.01

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCS
CENTRAL TENDENCY EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil/Subsurface Soil	Surface/Subsurface Soil	Torpedo Shops (Site 7)	Benzo(a)anthracene	2.4E-08	--	3.8E-09	--	2.7E-08	NA	--	--	--	--
			Benzo(a)pyrene	2.3E-07	--	3.8E-08	--	2.7E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	2.9E-08	--	4.8E-09	--	3.4E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2.1E-08	--	3.5E-09	--	2.5E-08	NA	--	--	--	--
			Aroclor-1254	3.4E-08	--	4.2E-09	--	3.8E-08	Immune	0.03	--	0.004	0.03
			Antimony	--	--	--	--	--	Blood	0.09	--	--	0.09
			Arsenic	3.5E-07	--	1.3E-08	--	3.7E-07	Skin	0.03	--	0.001	0.03
			Cadmium	--	--	--	--	--	Kidney	0.01	--	0.0004	0.02
			Chromium	--	--	--	--	--	None Specified	0.02	--	--	0.02
			Manganese (soil)	--	--	--	--	--	CNS	0.006	--	--	0.006
			Thallium	--	--	--	--	--	None Specified	0.02	--	--	0.02
			Vanadium	--	--	--	--	--	None Specified	0.01	--	--	0.01
			Chemical Total	6.9E-07	--	6.7E-08	--	7.6E-07		0.2	--	0.005	0.2
		Exposure Point Total						7.6E-07					0.2
	Exposure Medium Total							7.6E-07					0.2
Medium Total								7.6E-07					0.2
Receptor Total								Receptor Risk Total 7.6E-07					Receptor HI Total 0.2

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
NSB-NLON, GROTON, CONNECTICUT

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil/Subsurface Soil	Surface/Subsurface Soil	Torpedo Shops (Site 7)	Benzo(a)anthracene	8.8E-09	--	8.7E-10	--	9.7E-09	NA	--	--	--	--
			Benzo(a)pyrene	8.7E-08	--	8.6E-09	--	9.6E-08	NA	--	--	--	--
			Benzo(b)fluoranthene	1.1E-08	--	1.1E-09	--	1.2E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8.0E-09	--	7.9E-10	--	8.8E-09	NA	--	--	--	--
			Aroclor-1254	1.3E-08	--	9.6E-10	--	1.4E-08	Immune	0.003	--	0.0002	0.003
			Antimony	--	--	--	--	--	Blood	0.010	--	--	0.01
			Arsenic	1.3E-07	--	3.0E-09	--	1.4E-07	Skin	0.003	--	0.00007	0.003
			Cadmium	--	--	--	--	--	Kidney	0.002	--	0.00002	0.002
			Chromium	--	--	--	--	--	None Specified	0.002	--	--	0.002
			Manganese (soil)	--	--	--	--	--	CNS	0.0006	--	--	0.0006
			Thallium	--	--	--	--	--	None Specified	0.002	--	--	0.002
			Vanadium	--	--	--	--	--	None Specified	0.001	--	--	0.001
			Chemical Total	2.6E-07	--	1.5E-08	--	2.7E-07		0.02	--	0.0003	0.02
		Exposure Point Total						2.7E-07					
Exposure Medium Total						2.7E-07						0.02	
Medium Total						2.7E-07						0.02	
Receptor Total						2.7E-07						0.02	



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND

10 INDUSTRIAL HIGHWAY

MAIL STOP, #82

LESTER, PA 19113-2090

IN REPLY REFER TO

5090

Code EV23\ME

SEP 21 2004

From: Commanding Officer, Engineering Field Activity Northeast,
Naval Facilities Engineering Command
To: Commanding Officer, Naval Submarine Base New London
(Attn: Ms. Melissa Cokas)

Subj: SITE 7 AND 14 SOIL RECORD OF DECISION

Ref: (a) Department of the Navy Installation Restoration
Manual (Draft), 2001 Update

Encl: (1) Record of Decision for Site 7 and 14 Soil (Operable
Unit 8)

1. Please find enclosed the Record of Decision (ROD) for the Site 7 and 14 Soil. In accordance with reference (a), the ROD must first be signed by the installation Commanding Officer, and then forwarded to EPA Region I for signature.

2. The point of contact at EFA Northeast is Mark Evans who can be reached at (610) 595-0567 extension 162.

A handwritten signature in cursive script, reading "A. E. Haring", is positioned above the typed name and title.

A. E. HARING, Head
Environmental Restoration Div
By direction

Copy to:

Ms. Kymberlee Keckler, USEPA Region I
Mr. Mark Lewis, CT DEP

SITE 14 – OVBANK DISPOSAL AREA NORTHEAST (OBDANE)

Site Description

- Site 14 is located adjacent to Sites 3 and 7 in a wooded area on the edge of a ravine just north of Stream 3.
- The site was generally circular in shape and approximately 80 feet in diameter.
- Miscellaneous wastes were dumped over the edge of a ravine in the past.



OBDANE Before the Non-Time Critical Removal Action

Investigation Results

- The soil at the site was investigated during the Phase I RI (Atlantic, 1992) and Phase II RI (B&R Environmental, 1997).
- Low concentrations of volatile organic compounds, polynuclear aromatic hydrocarbons (PAHs), and pesticides and slightly higher concentrations of inorganics (e.g., arsenic and lead) were detected in the soil.
- Potential human health risks from exposure to soil were minimal.
- Contaminated soil may pose a risk to ecological receptors.



OBDANE After the Non-Time Critical Removal Action

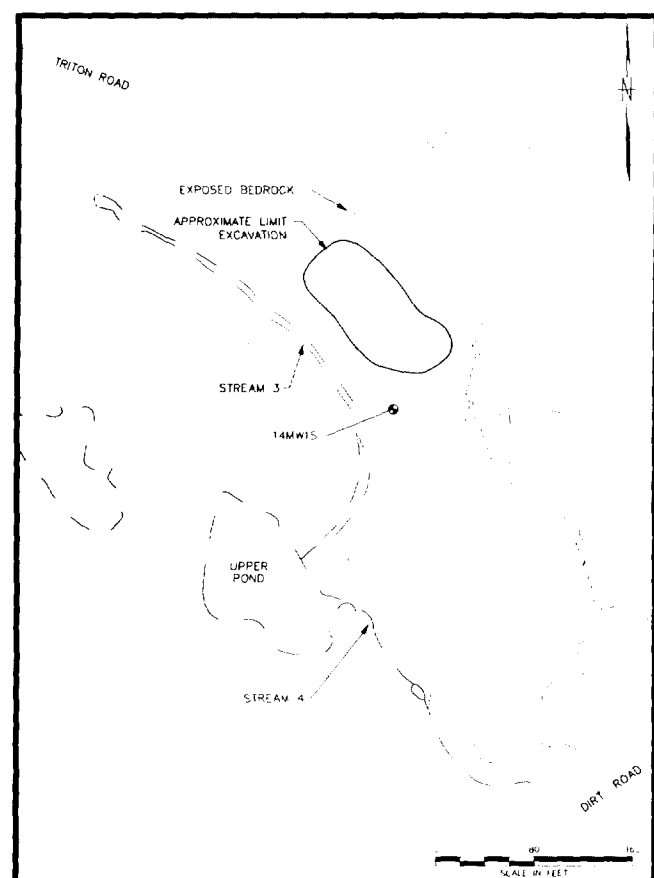
Non-Time Critical Removal Action

Originals in color.

- Removal action completed at the site in 2001.
- Approximately 270 tons of debris and contaminated soil were removed and disposed off-site.
- Remedial goals were selected from the Site 3 Operable Unit 3 remedial goals (ecological-based) and the Connecticut GB Pollutant Mobility Criteria.
- The site was subsequently restored.

Proposed Remedy for Site 14 Soil (Operable Unit 8)

- No Further Action for Site 14 soil under CERCLA. All site-related risks were addressed during the removal action.



Site 14 NTCRA Limit of Excavation

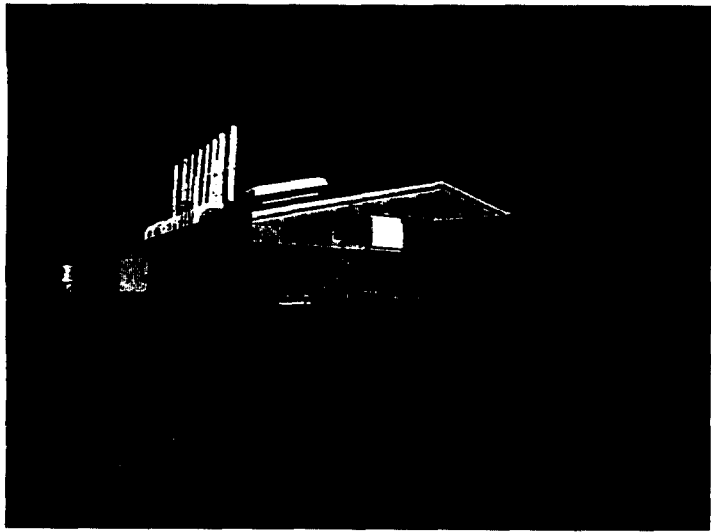
SITE 7 – TORPEDO SHOPS

Site Description

- The Torpedo Shops (Buildings 325, 450, 477, and 528) are located in the northern portion of NSB-NLON on the northern side of Triton Road.
- The Navy conducts maintenance activities on torpedoes at the site.
- Solvents and petroleum products are used and stored at the site and may have been disposed in the on-site septic system until 1983.
- Underground storage tanks (USTs) were used to store petroleum products and waste liquids at the site.



Torpedo Shops - Building 325



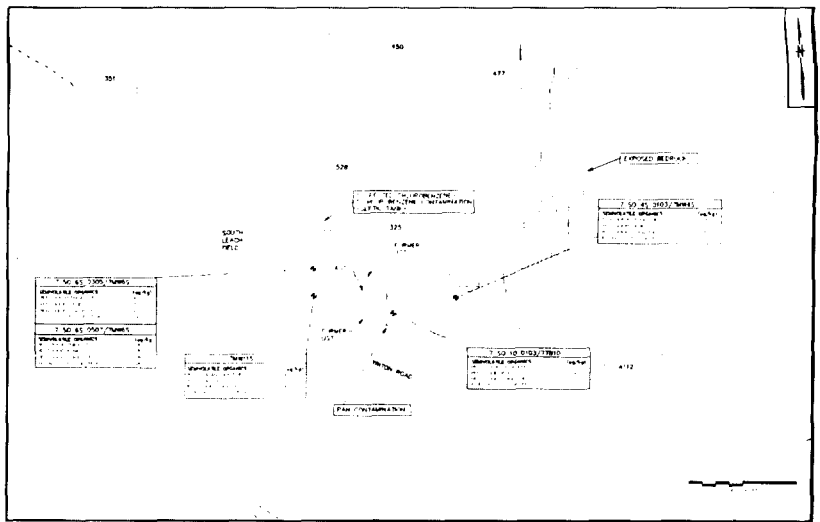
Torpedo Shops - Building 450

Alternatives for Cleanup

- Alternative S1 – No Action (\$89,600)
- Alternative S2 – Institutional Controls With Permeable Cover (\$98,000)
- Alternative S3 – Excavation and Off-Site Disposal (\$440,200)

Investigation Results

- The site was investigated during the Phase I Remedial Investigation (RI) (Atlantic, 1992); Phase II RI, (B&R Environmental, 1997); and Basewide Groundwater Operable Unit RI (BGOURI) (TtNUS, 2002).
- Soil data was summarized and further evaluated in the BGOURI Update/Feasibility Study (TtNUS, 2004).
- Polynuclear Aromatic Hydrocarbons (PAHs) detected in soil on the southern side of Building 325. Likely source of the PAHs was spillage or leakage of fuel oil from USTs.
- Suspected solvent-contaminated (benzene, chlorobenzene, and dichlorobenzene) soil on the western side of Building 325. Contaminants detected in groundwater and believed to be present in the septic tank or surrounding soil.
- Human health risk assessment showed that there are potential risks to current and potential future receptors from exposure to contaminated soil.
- Contaminated soil poses a potential contaminant migration concern.



Site 7 Layout and Contaminant Distribution Map

Proposed Remedy for Site 7 Soil (Operable Unit 8)

- Excavation and Off-Site Disposal (Alternative S-3)
 - ◆ Finalize delineation of contaminated soil and characterization of septic tank contents.
 - ◆ Excavate, characterize, transport, and dispose/recycle all contaminated soil and septic tank off site.
 - ◆ Conduct verification sampling.
 - ◆ Perform site restoration.
 - ◆ **Remedial Goals:** PAHs = 1 mg/kg; benzene = 0.02 mg/kg; chlorobenzene = 2.0 mg/kg; and 1,4-dichlorobenzene = 1.5 mg/kg.



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